Why Do Individuals Nondecide Under Uncertainty?

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1. Introduction.

In "Uncertainty, Potential Power, and Nondecisions," it was found that the probability of a change-response [P(C)] is inversely proportional to a central person's (C's) potential power even if S does not know what the probability of C's use of his power is and even if S does not know what C's preferences (for change) are.

There are two possible explanations of this effect, both of which are discussed in that paper. It is possible that S is making inferences from what S knows about C and about C's situation (provided by E's instructions about the setting) to infer C's preferences and, given inferences about C's preferences to infer C's probabilities of use of the power to sanction. It is also possible that under uncertainty S's who do not know what C prefers or how likely C is to sanction S for noncompliance increasingly minimize the probability of a penalty as the cost of such a penalty increases, regardless of what S infers about C's preferences, etc. We will refer to the first as the inference hypothesis and to the second as the minimin hypothesis.

Evidence from previous theory and research can be found to support both of these hypotheses, in Tversky and Kahneman for inference, in VonNeumann and Morgenstern for the minimin hypothesis. (Note that the minimax hypothesis is actually a different idea: With the minimin hypothesis, it is the probability of the penalty that is minimized, not the magnitude.)

If we want to choose between the two hypotheses or estimate their relative importance as explanations for the results of the potential power experiment we must find some way to strip the experimental setting of the cues that inform S of C's interests in things as they are. After a good deal of thought, it did not seem likely that the desired result could be obtained by any simple changes in the standardized experimental setting (SES) used in the nondecision research program. Nor did it seem worth the investment to develop a full-scale alternative (requiring a year's work at least). A cheaper alternative is to attempt a "simulation" in the Bern sense of that word (as opposed to the computer sense of it).

Cronkite has shown how uncertain are the inferences that can be made from this method without a full-scale program of research to determine how the simulate relates to the experimental setting. (See Cronkite, 1979). Nevertheless, the method is adopted in the following memorandum with certain safeguards motivated by Cronkite's critique.

2. Method.

Cronkite analyzes two purposes of simulation: as a cheap and convenient substitute for experiment in testing a hypothesis; and as a means of justifying an alternative interpretation (usually involving an argument of "simplicity" or "parsimony"

that favors the simulate). Here we actually have a third, somewhat different, purpose. We want first to establish that the simulation is isomorphic to the SES, then alter the simulation to rule out one possible hypothesis about the effects found in the exper iment.

We actually have two previous experiments in the same SES that can be used in establishing the isomorphism of experiment to simulation. The first is the experiment testing the "law of anticipated reactions" (hereafter the LAR experiment) . The second is the potential power experiment (hereafter the BKI experiment, referring to its three conditions, baseline, knowledge, and ignorance). The simulation describes the conditions of these two experiments to a respondent (R) who is asked to say how he would respond in the experiment <u>as if</u> R were an S in the experiment.

The simulation then describes the conditions to R in a different way, stripping the setting of any cues to C's preferences, interests, goals or feelings, and again asks R to say how he would behave as if R were S. Finally, R is asked to respond not as S but as an observer of other individuals in S's position.

3. <u>Simulation of the LAR experiment</u>.

Eighty-three male students were given a questionnaire in which the following situation was described to them:

Imagine that you are in a situation in which:

You are working at a task with five other people.

One member of the group (not you) is chosen to allocate the money earned by the group as he or she sees fit.

The person who allocates the team earnings was chosen at random and is exactly like you in age, sex, and education.

The person who allocates team earnings is also in a position to earn extra money worth about three times as much as the rest of the team if they shared earnings equally. This seems unfair to you.

There is a legitimate way to change things so that you would have an equal chance to get the extra money.

Whether or not you choose to change things, the person originally chosen to allocate team earnings will continue to decide how they are divided.

In fact, if he or she wishes, s/he may choose to withhold team earnings entirely from any team member who tries to change things.

Thus, you are faced with the following choices. Circle the letter that best represents your choice in each situation, and briefly describe your reasons for making the choice.

R was then asked to answer the following questions "in a way that best represents your views. There are no right or wrong answers. Work as quickly as you can, but please read the background material and each question CAREFULLY." They were told not to put their name on the questionnaire to assure their anonymity. Response rates are shown in parentheses after each response alternative.

Problem 1.

You are told that past experience has indicated that the person allocating shares of the team earnings generally likes the position, prefers to stay in it, and almost always withholds shares of team earnings from those who attempt to change the set-up. Here are the two possible choices you could make:

A. Leave the set-up as is for sure earnings of $8.00 (your share of group pay) (71%)

OR

B. Change things for a probability of almost 0 of earning $12.00 (which is how much you would earn with both an equal share of team earnings plus extra pay) and a probability of almost 1 of gaining nothing. (29%).

Which would you choose? Why? (See below.)

Problem 2.

You are told that past experience has indicated that the person allocating shares of the team earnings generally likes the position, prefers to stay in it, and withholds shares of team earnings from those who attempt to change the set-up about 50% of the time, but that 50% of the time they are not withheld. Here are the two possible choices you could make.

A. Leave the set-up as is for sure earnings of $8.00 (your share of group pay) (45%)

OR

B. Change things for a probability of .5 of earning $12.00 and a probability of .5 of gaining nothing. (55%)

Which would you choose? Why? (See below.)

Problem 3.

You are told that past experience has indicated that the person allocating shares of team earnings generally likes the position, prefers to stay in it, and almost neveT withholds shares of team earnings from those who attempt to change the set-up. Here are the two possible choices you could make:

A. Leave the set-up as is for sure earnings of $8.00 (your share of group pay) (10%)

OR

B. Change things for a probability of almost 1 of earning $12.00 and a probability of almost 0 of gaining nothing. (90%)

Which would you choose? Why? (See below).

In explaining why they made the responses they-did, virtually all the answers when sanctions are almost certain are accounted for by two alternative reasons for behavior. The 71% who made no change said they did not because sanctions were

certain. The remaining R's almost all said they would change because of desire for equity, 27%. But 1% said they liked to gamble, and 1% said they had nothing to lose.

When the likelihood of a sanction is .5, those who do not change still say sanctions are a sure thing (46% of all R's), but those who change divide among those who desire equity (31%), those who like to gamble (11%), and those who see little risk **(12%).**

When the likelihood of a sanction is almost 0, there is no explanation in the why-responses for those who stay. Equity motivates 28% of the R's, 70% see little risk, only 1% say that sanction is still a sure thing, and 1% say they know C's preferences, hence there is still a risk.

The following table compares the results of the simulation with those of the LAR experiment.

Table 1. Comparison of the LAR experiment with the LAR simulation

	Percentage of Change-Responses	
P (S)	LAR Experiment	LAR Simulation
Almost Always	27%	29%
About Half	42%	55%
Almost Never	62%	90%

It is clearly unwarranted to assume that the simulation is isomorphic to the experiment. The Method interacts with the

manipulations in such a way that, although the basic finding is the same in both methods (C-r-esponses are inversely proportional to the probability of sanctions), the simulation constrains change less than the experiment and the differences between methods increase as P(S) decreases.

4. Simulation of the BKI experiment.

R's were asked:

Problem 4.
You are told that past experience has indicated that the person allocating shares of the team earnings generally likes the position, and prefers to stay in it. However, you have no basis at all for forming a view of whether or not that person will use the power to withhold team earnings against anyone who attempts to change the set-up. Here are the two possible choices you could make:

A. Leave the set-up as is for sure earnings of $8.00 (your share of group pay) (49%)

OR

B. Change things for an unknown probability of earning $12.00 and an unknown probability of gaining nothing. (51%)

Which would you choose? Why? (See below.)

Problem 5.
You have no way of knowing whether the person allocating shares of the team earnings likes that position of would want to stay in it, and, therefore, no way of knowing whether that person will use the power to withhold team earnings against anyone who attempts to change the set-up. Here are the two possible choices you could make:

A. Leave the set-up as is for sure earnings of $8.00 (your share of group pay) (42%)

B. Change things for an unknown probability of earning $12.00 and an unknown probability of gaining nothing. (58%)

Which would you choose? Why? (See below.)

Explaining their responses, 44% of those who knew C's preferences and 34% of those who did not said they stayed because sanctions were certain. Another 2% of those who knew C's preferences said that they knew his preferences and therefore there was some risk of sanction. In the same way, 6% of those who did not know C's preferences said that they were uncertain, but there was some risk and therefore they did not make a change-response. Change, in both cases, was explained by cesire for equity (38% in the knowledge condition and 35% in the ignorance condition), pleasure of a gamble (9% and 11%), small chance of risk (6% and 13%), or the fact that there was little to either gain or lose (1% in each condition).

Comparing the results of the simulation to the results of the BKI experiment,

Table 2. Comparison of the BKI experiment to the BKI simulation.

Condition	Percentage of Change-Responses	
	BKI Experiment	BKI Simulation
Knowledge of Preferences	70%	51%
Ignorance of Preferences	52%	58%
Baseline Condition	95%	

At first sight there looks to be a large difference between the two (a 19% difference between experiment and simulation in the knowledge condition). If this is a real difference it is a puzzling one, because to this point one would suppose that what

differentiates the simulation from the experiment is the greater effect of desire for autonomy on the simulation (a difference which makes sense). However, it is worth calling attention to the fact that the difference between the knowledge and ignorance condition in the BKI experiment (70-52 = 18%) is not a significant difference. (More exactly, the differences between the two survivor curves, of which this statistic is one point, are not significant.) Hence, the result of the BKI experiment is that both knowledge and ignorance differ from the baseline but the two do not differ from each other. The result of the simulation is also that knowledge and ignorance do not differ from each other.

5. Simulation of the Ignorance Condition when C's objective interests are unknown.

Few R's in the BKI simulation explained their behavior by appeal to a minimum principle. Almost all appealed instead to inferences made about C's preferences. Even without knowing C's preferences (i.e. without any information from the experimenter (E) about them), R's felt able to infer them from what they knew about the structure of the situation, hence C's objective interests. Furthermore, if they knew C's preferences they also felt able to infer C's probable sanction behavior (which presumably increases with the intensity of C's preferences).

Would this mean that if S's in the BKI experiment were not able to make such inferences their change-rate would increase? An attempt was made to simulate a situation in which R had no available cues to infer C's interests or preferences. Two kinds of simulations were attempted, one in which R was to think of himself as in S's role and one in which (as in Bern's simulations) R was to think of himself as an observer of others in S's role and predict how the others would behave.

The question asked of R's was:

> You are one of five people undergoing a group interview for graduate school. This particular school has always had a top reputation in your field, and after talking with faculty and students you are convinced that this is the place for you. You decide that you would not want to settle for anyplace else, and will do everything possible to be accepted.
>
> The interview seems to be going well for everyone, but you have been told that only one of you can expect to be accepted. The questions asked by the interviewer up to this point have been very general and rather easily answered. Now, however, the interviewer askes a very specific question about how you would deal with an issue of great controversy in your field. You are familiar with both sides of the issue, of course, but lean toward a particular point of view. You know that this question is being asked as some sort of test or selection mechanism. Naturally, you want to appear to your best advantage in the group, so you figure that you should answer the question first. This, however, is a gamble, as you have NO IDEA how the interviewer feels about this particular topic, and you feel that your view, although less traditional, is better and is in fact the method of the future for handling the situation.
>
> What would you do? Circle the letter that best represents your choice, and <u>briefly</u> describe your reasons for making that choice. Assume that members of your group are the same sex and generally the same age as you, and that the interviewer is the same sex as you.

A. I would propose the traditional point of view. (0)

B. I would propose my point of view. (70%)

C. I would not be the first to speak. (30%)

WHY? (See below) .

What do you think others would do in this situation?

A. Traditional view. (1%)

B. Own view. (46%)

C. Would not speak first. (53%)

WHY? (See below) .

In explaining their behavior, the 70% who thought they would openly express their own point of view appealed to either a desire to be honest or to be autonomous. The 30% who thought they would not speak first all said that this was the cautious thing to do. In explaining the behavior of others the answers were very much the same: Forty-three per cent thought others would express their own views because of needs for honesty or autonomy; 6% explained either expressing a traditional view, waiting, or expressing one's own view, by the fact that the interviewer would prefer it; and 51% explained not speaking first by the need for caution until one knew what the interviewer thought, how he reacted to other people's views, etc.

Thus, there is a marked autonomy effect in this simulation reflected in marked differences between predicting one's own behavior and the behavior of others. But in explaining the

behavior of others there is a strong effect of a minimax-like principle, minimizing the probability that the worst that could happen does.

6. Summary and Conclusions.

The first conclusion to draw from these results is that it is unwarranted to assume that the simulation replicates the experiment. There are in principle three kinds of differences between simulation and experiment, probably all of which operate here: First, the manipulations differ and therefore probably differ in the strength of effect on the unobservable independent variables (C's potential power, intensity of C's preferences, probability of a sanction, importance of the sanction to S or R). Second, the measurement of a change-response differs (behavior vs verbal report) ana therefore probably the estimates of the magnitude of effect on the unobservable dependent variable (protest). Third, there are differences in the specification of the two models that underlie the experiment vs the simulation. For example, the demand characteristics of the experiment do not occur in the simulation (i.e. the cues to what the E wants probably differ), the motivations of S probably differ from those of R, the constraints that inhibit the expression of needs for autonomy (or the demand characteristics that lead S vs R to believe that autonomy is expected by E) differ between the experiment and

simulation.

But the failure of isomorphism between the two should not disguise how similar the results of the two are. If one simply compared the two ordinally, their effect would be essentially the same: If S (or R) knows C's preferences and the probability of a sanction, a change-response is inversely proportional to the probability of a sanction. If S does not know how likely a sanction is or not even what C prefers, he is much less likely to make a change-response if C could sanction him, but it makes little difference whether he knows C's preferences or not. The first part of this latter result is not replicated in the design of the simulation; the second part is found in the simulation as well as in the experiment.

The autonomy effect, which is perhaps one of the factors that differentiates the simulation from the experiment, is particularly important in differentiating two kinds of simulation: When R is in the role of S he prominently predicts autonomy. When R is in the role of observer of S, he predicts a change-response (or its equivalent) only about half the time (roughly the same as in the simulation of the SES and roughly the same as in the BKI experiment). Furthermore, explaining why this response is likely, R appeals to the need to minimize the prospects of the worse that could happen actually happening.

This does not necessarily imply that the minimin hypothesis

explained the behavior of the ignorance condition in the BKI experiment either in part or as a whole. That is, the logic that led Bern to reject Festinger's dissonance hypothesis because a simulation led R's to predict the same result when they were not themselves in a dissonant state (and to adopt in its place the self-perception hypothesis) cannot be used here to justify the conclusion that the minimin hypothesis was the real explanation of the BKI results. The logic is perhaps right: If one removes the basis for inferring C's preferences one still gets about the same rate of C-responses, which R explains as a result of a minimin principle. But if R does have the cues provided by the SES what R does is somewhat similar to the experiment and he explains this by appeal to preferences and sanctions inferred from the setting. We are in other words about where we were before we did the simulation: Either or both of the two hypotheses, inference or minimining, explains the results of the BKI experiment.